

EXECUTIVE SUMMARY

PERSPECTIVE

The goal of the Combined Sewer Overflow Long Term Control Plan (CSO LTCP) is to bring the Town of Speedway into compliance with the Clean Water Act (CWA), the Town's National Pollutant Discharge Elimination System (NPDES) permit, and to reduce the Combined Sewer Overflow (CSO) discharges to Big Eagle Creek consistent with Indiana's CSO Control Strategy. The Town has proactively pursued CSO reduction since the early 1990's resulting in significant collection system improvements and elimination of two CSO locations. The Town has one remaining active CSO (CSO 002) located at the Wastewater Treatment Plant. The implementation of the LTCP will continue with a project focused on further reduction of CSO discharges from CSO 002.

The Town of Speedway has received designation from IDEM as a "small community" under the current guidelines for LTCP development. This designation allows the Town to develop a LTCP using a modified planning approach with alternative requirements than originally included in the Town's NPDES permit.

The following summary provides the essence of the months of planning and analysis to arrive at a comprehensive plan for the Town of Speedway.

CONSIDERATION OF IMPACTS TO SENSITIVE AREAS NEAR CSO DISCHARGE POINTS

The Citizens Advisory Committee (CAC) met in multiple sessions to review the sensitive area criteria and the CSO discharge point along Big Eagle Creek. The committee considered the conditions found along the receiving streams and evaluated the four types of sensitive areas provided in IDEM's guidance document to determine that no sensitive areas exist that are impacted by the Town's CSOs.

COLLECTION SYSTEM CHARACTERIZATION

Background

The Town of Speedway's wastewater collection system is comprised of 72 miles of sewers with approximately 15% of the sewer system constructed as combined sewers and the remaining 85% as sanitary sewers. The wastewater collection system provides service for a population of approximately 22,000 over a 7.5 square mile area, including portions of the City of Indianapolis. The system has one permitted CSO with discharge to Big Eagle Creek.

The Town of Speedway owns and operates a Class IV, 7.5 MGD activated sludge wastewater treatment plant (WWTP). The plant is located at 4251 West Vermont Street, on the southeast side of Town. The existing plant has a design average daily flow capacity of 7.5 MGD, but

can treat a sustained flow up to 8.9 MGD during wet-weather. Typical dry-weather average daily flow at the WWTP is 5.5 MGD. Peak wet-weather flows conveyed to the WWTP in the 72-inch combined sewer can exceed 60 MGD.

Monitoring Data

Daily flow monitoring data were collected at various locations and times throughout the wastewater collection system and the WWTP from 1995 through 2006 to gain an understanding of the operation of the system during both dry-weather and wet-weather conditions. Each active CSO was also monitored throughout this period. Flow information for specific storm events was available from 2004 to 2006. Flow measurements were made at all the significant flow points. Flow information was taken in 10 minute intervals.

Sampling

The Town completed stream sampling from April 1995 to July 2002 as part of the SRCER. Samples were obtained from several locations in Big Eagle Creek both upstream and downstream of the Town's CSOs in an effort to evaluate CSO impacts. With the exception of Fecal Coliform, the instream sampling data showed minimal impact from CSOs for most parameters tested. Based on the sampling data and known elevated bacteria levels in streams throughout the state, it is expected that *E. coli* water quality standards cannot be met during wet weather even if the Town's remaining CSO is removed from the system unless additional point source and non-point sources contributing flow to the stream upstream of Town are addressed.

Existing Conditions

Based on historical collection system flow monitoring data, WWTP flow data, and CSO flow monitoring data, annual average CSO data are summarized as follows:

- CSO Volume: 50 MG/year
- Precipitation Total: 41 inches/year
- Approximately 40 days of active CSO discharge per year
- Approximately 100 days with measurable precipitation per year
- Most CSO events have discharge of less than 5 MG
- The Town captures 90-95% of wet-weather flow for treatment.
- The Town typically provides full treatment for approximately 98% of the total flow collected in the system.

COMPLETED CSO PROJECTS

Speedway has completed a number of CSO reduction projects over the years. The projects of notable attention are as follows:

- Farley Sanitary Sewer Rehabilitation Project (Phase I, II) – 4,500 feet of sanitary sewer rehabilitation.

- Lynhurst Drive Road Reconstruction Project – 5,000 feet of sanitary sewer construction.
- Lynhurst Drive Sewer Separation Project Phase II – 6,200 feet of sanitary and storm sewer construction.
- WWTP Improvements – Fine screen installed at CSO 002.

EVALUATION OF CSO CONTROL ALTERNATIVES

Based upon a review of available options, their associated implementation cost estimates, CSO reduction capabilities, impacts on the community, ongoing operational and maintenance costs, complexity of operations, and ability to address non-CSO related problems, the following alternatives were identified for evaluation:

- Alternative No. 1 – Sewer Separation
- Alternative No. 2A – Conventional Primary Clarifiers/Chlorine Disinfection at WWTP
- Alternative No. 2B – Conventional Primary Clarifiers/UV Disinfection at WWTP
- Alternative No. 2C – Filtration/UV Disinfection at WWTP
- Alternative No. 3 – Storage/Full Treatment at WWTP

PUBLIC PARTICIPATION PROCESS

A Citizen's Advisory Committee (CAC) was organized in order to act as a liaison between the public, municipal officials, and IDEM. The charge to the CAC was as follows:

- Review the Indiana Department of Environmental Management's (IDEM) *Combined Sewer Overflow Long Term Control Plan Use Attainability Analysis Guidance Document*.
- Determine if sensitive areas exist within the receiving streams impacted by the Town's CSO discharges.
- Evaluate CSO reduction alternatives.
- Recommend a plan of action and an implementation schedule for the Town's LTCP.

SELECTED PLAN DESCRIPTION

Based upon the evaluation of CSO control alternatives, recommendations from the Citizens Advisory Committee (CAC), and public input, Alternative No. 2B has been selected for implementation. The following projects are included in the selected plan to reduce CSO volume to the receiving stream:

- 80 MGD Wet-Weather Pump Station
- Two (2) 120-foot diameter Primary Clarifiers with 18.5 foot side water depths
- Electric Actuator valves for sludge discharge and storage return to the WWTP
- 80 MGD UV Disinfection for wet weather and UV Disinfection for WWTP effluent (in existing chlorine contact tank)

The selected plan has a total estimated project cost of \$21,300,000 which includes non-construction costs and construction contingency. This estimate is based on a preliminary planning effort and 2007 unit costs. Implementation of this plan will result in partial treatment of all wet-weather flows up to and beyond a 10-year/1-hour rain event. Wet-weather flow diverted to the proposed system will receive primary treatment with a minimum 30 minute detention time and disinfection prior to discharge to the receiving stream. Up to 3.4 million gallons of water remaining in the primary clarifiers will be drained to the WWTP for full treatment.

FINANCIAL CAPABILITY ASSESSMENT AND IMPLEMENTATION SCHEDULE

The Town of Speedway conducted a financial capability assessment to determine the Town's capability to afford a project of this magnitude and to determine the suggested implementation period. The assessment was conducted in accordance with LTCP guidelines.

POST-CONSTRUCTION COMPLIANCE MONITORING PROGRAM

The post-construction compliance monitoring procedures consist of the follow components:

- Flow monitoring
- Stream sampling
- Quality assurance/quality control
- Record keeping and reporting

The Town will utilize these data to evaluate actual CSO reduction throughout the LTCP implementation.

CSO OPERATIONAL PLAN UPDATE

The current CSO Operational Plan is a compilation of documents developed over a fifteen-year period. Any updates to the CSO Operational Plan required as a result of completed LTCP projects will be incorporated into the plan.